

List of Current Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1 - 6 (Cancelled).

7. (New) A method for safe data transfer between an intrinsically safe sensor and a non-intrinsically safe computer unit, comprising the steps of:

- converting analog measured values into digital measurement data in a sensor-module of the sensor;

- transferring the digital measurement data to a sensor-module head of the sensor via a galvanically decoupled transfer path, and further to a calibration unit;

- saving the measurement data to a portable storage medium which is separable from the calibration unit;

- transporting the storage medium in a separated state to the computer unit;

- connecting the storage medium with the computer unit; and

- transferring the measurement data to the computer unit via a standard interface provided at the computer unit.

8. (New) A method for safe data transfer between an intrinsically safe sensor and a non-intrinsically safe computer unit, comprising the steps of:

- converting analog measured values into digital measurement data in a sensor-module of the sensor;

- transferring the digital measurement data to a sensor-module head of the sensor via a galvanically decoupled transfer path, and further to a calibration unit;

- transferring the measurement data from the calibration unit to an interface CDI, which is embodied as an Ex-barrier; and

- transferring the measurement data from the interface CDI to the computer unit via a standard interface provided at the computer unit.

9. (New) The method as claimed in claim 7, wherein:
the standard interface at the computer unit is a USB-interface.

10. (New) The method as claimed in claim 7, wherein:
data transfer between the sensor and the calibration unit occurs with a
proprietary protocol in accordance with the RS485 standard.

11. (New) A method for safe data transfer between an intrinsically safe sensor
and a non-intrinsically safe computer unit, comprising the steps of:

converting analog measured values into digital measurement data in a sensor-
module of the sensor; and

transferring the digital measurement data to a sensor-module head of the sensor
via a galvanically decoupled transfer path, and further to a plug-in module of the
computer unit, with the plug-in module being embodied as an Ex-barrier.

12. (New) The method as claimed in claim 11, wherein:
the plug-in module is a PCMCIA plug-in card.